



Atharva Institute of Management Studies

Activity / Event report

Name of event	: FACULTY SPEAKS, Episode 16
Date(s) of conduction	: 24 November 2021
No. of participants	: 19
Student coordinator/ committee	: Sneha Kamalpuria (MMS)
Resource person	: Dr. Ansha Gupta
Designation	: Assistant Professor
Contact no.	:
Email ID	: ansha.gupta@atharvaims.edu.in


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DESCRIPTION

Objectives:

- Mediation Analysis.

Key Takeaways:

- Mediation analysis investigates the mechanisms that underlie an observed relationship between an exposure variable and an outcome variable and examines how they relate to a third intermediate variable, the mediator.
- To understand the relevance of testing mediation effect, it is first necessary to understand the mediation effects.
- Understanding mediation effects with the help of a hypothesis model on direct relationship of self-esteem and happiness to grades.
- Effects:
 - Total effect
 - Direct effect
 - Indirect effect
- The need of a mediator in a model must be explicitly raised and justified up front by responding to two key questions:

- Why a mediator is needed?
- Which variable should be considered the mediator and why?
- Number of hypotheses:
 - Segmentation Approach (H1, H2, H3)
 - Transmittal Approach (H1)
- The mediation effect and Baron and Kenny's procedure and beyond.
- Testing the relation between antecedent (X) and outcome (Y).
- Advanced procedure for mediation analysis in PLS.
- Mediation analysis – steps:
 - Step 1: Determining the significance of indirect effects.
 - Step 2: Determining the type of affect and/or of mediation.
- Types of mediation:
 - Full/complete mediation
 - Partial mediation
- Two types of partial mediation:
 - Complementary partial mediation
 - Competitive partial mediation
- Statistical evidence of relationships.
- Additional aspects for assessing mediation models fit and strength in PLS.
- Variance Accounted For (VAF).
- $VAF = a * b / a * b * c'$
- Handling multiple mediator model.
- Few words from Dr. R.G. Ratnawat, Director, AIMS.
- Few words from Dr. Harshita Kumar, Director, AIMS.

FLYER OF THE EVENT



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16

#facultyspeaks

ATHARVA INSTITUTE OF MANAGEMENT STUDIES
(Affiliated to Mumbai University)

presents

FACULTY SPEAKS



LIVE



NOV 24th, 2021
10:00 - 11:00 AM (IST)

WEDNESDAY



Dr Ansha Gupta
MBA (Finance & HR), PhD (Management)

Mediation Analysis



www.atharvaims.edu.in

Flyer Designed by: Piyush Chaudhary (MMS)

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GLIMPSES



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The screenshot shows a Google Meet interface on a Chrome browser. The main window displays a PowerPoint presentation titled "Mediation analysis - PowerPoint" by Dr. Ansha Gupta. The current slide features the text "MEDIATION ANALYSIS" in a large, white, outlined font against a background of a person in a blue shirt. The presentation toolbar is visible at the top of the slide, and a slide navigation pane is on the left. To the right of the presentation is a grid of participant video thumbnails. The participants shown are: Ansha Gupta (presenting), Monika Chopra, Dr. R.C. Rathawade, Vaibhav. Patil, Gaanyesh Kulka..., Dr. Komal Ahuja, Gahesh Apte, Bincy Baby, Deepak Asarpota, Pallavi Rane, and You. The bottom of the screen shows the macOS dock with various application icons, including Safari, Messages, Mail, Photos, WhatsApp, Calendar (showing NOV 24), Apple TV, Music, Podcasts, App Store, Chrome, Word, Excel, PowerPoint, and a trash can. The system status bar at the top indicates the time is 10:00 AM on Wednesday, November 24, 2021, with a battery level of 61%.


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The screenshot shows a Google Meet interface on a Chrome browser. The main window displays a PowerPoint presentation titled "Mediation analysis - PowerPoint". The slide is titled "Introduction" and contains the following text:

- Mediation analysis investigates the mechanisms that underlie an observed relationship between an exposure variable and an outcome variable and examines how they relate to a third intermediate variable, the mediator.
- Rather than hypothesizing only a direct causal relationship between the independent variable and the dependent variable, a mediational model hypothesizes that the exposure variable causes the mediator variable, which in turn causes the outcome variable.
- The mediator variable then serves to clarify the nature of the relationship between the exposure and outcome variable

The presentation includes an icon of two people sitting at a table. The Meet interface shows a grid of participants: Ansha Gupta (presenting), Monika Chopra, Dr. R.C. Rathawat, Vaibhav. Patil, Gaanyesh Kulka..., Dr Komal Ahuja, Gahesh Apte, Bincy Baby, Riniyanka Kumari, Pallavi Rane, 3 others, and You. The system tray at the bottom shows the time as 10:01 AM and the meeting ID as zsq-kvrq-pfd.


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The screenshot shows a Google Meet session in progress. The main window displays a PowerPoint presentation titled "Mediation analysis - PowerPoint". The slide is titled "Effects" and discusses "When Testing for Mediation".

Effects
When Testing for Mediation

Total Effect refers to the effect of Independent Variable on the Dependent Variable without the presence of Mediating Variable (Fig 1 (a)). Represented by C .

Direct Effect refers to the effect of Independent Variable on the Dependent Variable in the presence of Mediating Variable in the Model (See Fig 1 (b)). Represented by C' .

Indirect Effect refers to the effect of Independent variable on dependent variable through the mediator variable.

Diagram (a): A simple cause-effect relationship showing Independent Variable X connected to Dependent Variable Y by a path labeled C .

Diagram (b): A general mediation model showing Independent Variable X connected to Mediator Variable M by a path labeled A , Mediator Variable M connected to Dependent Variable Y by a path labeled B , and a direct path from Independent Variable X to Dependent Variable Y labeled C' .

Notes: (a) Simple cause-effect relationship; (b) general mediation model

The meeting interface shows a recording icon (REC) and a name tag for "Ansha Gupta is presenting". The participant grid includes Ansha Gupta, Bincy Baby, Dr. R.G. Rathnawar, Dr. Harshita Kumar, Gaanyesh Kulka..., Dr. Komal Ahuja, Ganesh Apte, Poonam Patel, Monika Chopra, Pallavi Rane, 6 others, and You.


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The screenshot shows a Google Meet interface with a presentation slide titled "Advanced procedure for mediation analysis in PLS". The slide content includes:

As shown, PLS researchers have to start by testing the indirect effect $a \times b$ when analyzing mediating effects. The indirect effect can also be formulated as the difference between the total and direct effect:

$$\text{Indirect effect } (a \times b) = \text{total effect } (c) - \text{direct effect } (c')$$

The diagram illustrates two paths from Independent Variable (IV) to Dependent Variable (DV):

- without mediator:** A direct path from IV to DV labeled with coefficient c .
- with mediator:** An indirect path from IV to Mediator Variable (MV) labeled with coefficient a , and a path from MV to DV labeled with coefficient b . The direct path from IV to DV in this model is labeled c' .

The Meet interface shows a recording indicator (REC), the presenter's name (Ansha Gupta), and a grid of 12 participant video thumbnails. The system tray at the bottom includes icons for various applications and the date (NOV 24).


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The screenshot shows a Google Meet interface on a Chrome browser. The main window displays a PowerPoint presentation titled "Mediation analysis - PowerPoint". The slide content is as follows:

Statistical evidence of relationships

Indirect Effect

$$X \xrightarrow{\beta_{xm}} M \xrightarrow{\beta_{ym}} Y$$

Full Mediation

$$X \xrightarrow{\beta_{xm}} M \xrightarrow{\beta_{ym}} Y$$

Partial Mediation

$$X \xrightarrow{\beta_{xm}} M \xrightarrow{\beta_{ym}} Y$$

The diagram for partial mediation includes a dashed arrow from X to Y labeled β_{yx} .

On the right side of the screen, there is a grid of participant video thumbnails. Visible names include: Ansha Gupta, Dr. R. C. Rameshwar, Pallavi Rane, Bincy Baby, Poonam Patel, Monika Chopra, Gahesh Apte, Vaibhav. Patil, Dr. Harshita Kumar, Gaanyesh Kulkarni, 6 others, and You.

At the bottom of the screen, there is a dock with various application icons including Safari, Photos, Messages, Mail, App Store, and Google Chrome.


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EVENT REPORT PREPARED BY: SNEHA KAMALPURIA, STUDENT, MMS DIVISION B.

Verified by: Dr. Shubhi Lall Agarwal, Director, IQAC, AIMS.

Submitted to: Dr. R.G. Ratnawat, Director, Atharva Institute of Management Studies.

This video was recorded on the Email ID paperpresentation@atharvacoe.ac.in

Live session was initiated by Sneha Kamalpuria.


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